



## Does participation in pre-primary education translate into better learning outcomes at school?

### TALKING POINTS

- Fifteen-year-old students who had attended pre-primary education perform better on PISA than those who did not, even after accounting for their socio-economic backgrounds.
- Disadvantaged students have less access to pre-primary education than advantaged students in almost every country, particularly those in which pre-primary education is not widespread.
- High-performing and equitable school systems are also those with little socio-economic disparity in access to pre-primary education.
- How pre-primary education is provided affects the extent to which attendance benefits individual students.

*The benefits of pre-primary education are evident and nearly universal.*

It's elementary: students benefit from pre-primary education. The OECD's PISA 2009 results show that in practically all OECD countries 15-year-old students who had attended some pre-primary school outperformed students who had not. In fact, the difference between students who had attended for more than one year and those who had not attended at all averaged 54 score points in the PISA reading assessment – or more than one year of formal schooling (39 score points). While most students who had attended pre-primary education had come from advantaged backgrounds, the performance gap remains even when comparing students from similar backgrounds. After accounting for socio-economic background, students who had attended pre-primary school scored an average of 33 points higher than those who had not.

In Belgium, France and Israel, students who reported that they had attended pre-primary school for more than one year scored at least 100 points higher in reading than students who had not. Comparing students from similar backgrounds, the gap narrows but remains above 60 score points. In contrast, in Estonia, Finland, Korea and the United States, attending pre-primary education has little or no relationship to later performance among students of similar backgrounds.



# PISA

## IN FOCUS

### The benefits of pre-primary education

Score point difference associated with attending pre-primary school for more than one year, after accounting for socio-economic background



In 31 of the 34 OECD countries and in 25 partner countries and economies, students from socio-economically advantaged backgrounds and those from disadvantaged backgrounds benefit equally from pre-primary education. In the United States, disadvantaged 15-year-olds tend to benefit more from pre-primary education. Furthermore, in Canada, Finland and Ireland, attendance in pre-primary education programmes is more strongly associated with improved reading performance among students with an immigrant background than among native students. It is therefore possible that immigrant students and those from disadvantaged backgrounds who attend high-quality pre-school services are likely to benefit more from the experience.

Countries are ranked in descending order of the score point difference associated with attending pre-primary school for more than one year, after accounting for socio-economic background.

Note: Statistically insignificant score point differences are marked in a lighter tone.

Source: OECD, PISA 2009 Database.

### Access to pre-primary education is widespread in many OECD countries...

Results from PISA 2009 show that, on average across OECD countries, 72% of 15-year-olds assessed by PISA reported that they had attended more than one year of pre-primary school. In Belgium, France, Hungary, Iceland, Japan and the Netherlands, pre-primary education is nearly universal, with more than 90% of students reporting that they had attended pre-primary school for more than a year. In fact, more than 90% of students in 27 OECD countries reported that they had attended pre-primary school for at least some time.



## PRE-PRIMARY EDUCATION

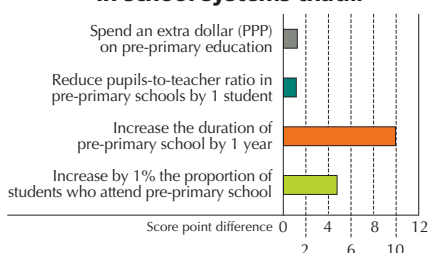
Pre-primary education covers all forms of organised and sustained centre-based activities – such as pre-schools, kindergartens and day-care centres – designed to foster learning, and emotional and social development in children. These programmes are generally offered to children from the age of three.

However, pre-primary education is rare in Turkey, where less than 30% of 15-year-olds reported that they had attended pre-primary school for at least one year. And in Canada, Chile, Ireland and Poland, less than 50% of students had attended pre-primary school for more than one year.

...but across OECD countries, students who attend pre-primary school tend to come from more advantaged backgrounds than those who don't attend.

The reasons for low uptake may include high net childcare costs for parents in some countries (Ireland), capacity constraints in subsidised childcare (Portugal), and the fact that migrant children at this age may be less likely to make use of formal services unless participation is mandatory (Belgium and the Netherlands).

### Average score point difference associated with attending pre-primary education in school systems that...



PISA results suggest that those school systems that perform the best and provide equitable learning opportunities to all students are also those that provide more inclusive access to pre-primary education. For example, Japan, Korea, Estonia, Iceland and Hong Kong-China have education systems in which the gap in socio-economic background between those students who had attended pre-primary school and those who had not is smaller than average. Among countries with below-average performance and equity, only Bulgaria shows above-average levels of inclusion in pre-primary education.

The degree to which attending pre-primary school is associated with learning outcomes at age 15 relates to how pre-primary education is provided.

PISA 2009 finds that the relationship between attending pre-primary school and better student performance at age 15 is strongest in school systems that offer pre-primary education to a larger proportion of the student population, that do so over a longer period of time, that have smaller pupil-to-teacher ratios in pre-primary school and that invest more per child at the pre-primary level of education.

United States		
	Value and rank (out of OECD countries for which data is available)	
Average duration of pre-primary education	1.8 years	18 (32)
Average pupils-to-teacher ratio in pre-primary schools	14 pupils	15 (28)
Public expenditure on pre-primary school per student (ppp)	9 394 USD	1 (29)
Reading score point difference between students who report having attended pre-primary school for more than one year and those who had not attended, after accounting for socio-economic background	12 score points*	27 (34)
Difference in pre-primary school attendance between socio-economically advantaged and disadvantaged students	82/59% (23 pp.)	5 (34)

\*Not statistically significant



# PISA

## IN FOCUS

Do the benefits of attending pre-primary school add up to better overall performance among those school systems in which more students have access to pre-primary education? Although PISA results do not show any relationship between the average performance of OECD countries and the proportion of students in those countries who had attended pre-primary school, when all countries and economies that participated in PISA 2009 are considered, a positive relationship between the proportion of these students and a country's performance emerges – even after taking the country's national income into account. For example, school systems that have a 10 percentage-point advantage in the proportion of students who had attended pre-primary school score an average of 12 points higher in the PISA reading assessment.

	France	
	Value and <b>rank</b> (out of OECD countries for which data is available)	
Average duration of pre-primary education	3.0 years	<b>1</b> (32)
Average pupils-to-teacher ratio in pre-primary schools	19 pupils	<b>26</b> (28)
Public expenditure on pre-primary school per student (ppp)	5 527 USD	<b>14</b> (28)
Reading score point difference between students who report having attended pre-primary school for more than one year and those who had not attended, after accounting for socio-economic background	65 score points	<b>4</b> (34)
Difference in pre-primary school attendance between socio-economically advantaged and disadvantaged students	96/89% (7 pp.)	<b>25</b> (34)

A growing body of research recognises that early childhood education programmes improve children's well-being, help to create a foundation for lifelong learning, make learning outcomes more equitable, reduce poverty and improve social mobility from generation to generation. Results from PISA suggest that participation in pre-primary education is particularly strongly associated with reading performance at age 15 in those countries where policies have sought to improve the quality of pre-primary education. Building on this evidence, the OECD is developing an online policy toolbox to help policy makers formulate and implement policies to improve the quality of early childhood education and care.

The bottom line: Widening access to pre-primary education can improve both overall performance and equity by reducing socio-economic disparities among students, if extending coverage does not compromise quality.

### For more information

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**See** *PISA 2009 Results, Overcoming Social Background: Equity in Learning Opportunities and Outcomes (Volume II)* and *PISA 2009 Results, What Makes a School Successful? Resources, Policies and Practices (Volume IV)*.

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